

**In the Specification**

Page 18, last paragraph

Each of the optically active regions (90) has an output line (not shown) which extends to processing circuitry for processing electrical signals generated by the detector elements (86) when infrared radiation falls thereon. With the arrangement shown in Figure 4 the signal transmitted along these lines do are not required to be multiplexed so such that each detector element (86) has its own associated detection circuitry. Furthermore, because the elements of the array are not closely packed, i.e. they are spaced apart, the design of the elements can be optimized to give the best performance. For example each element can be photoconductive with improved wavelength range and the design parameter can be adjusted for the highest quantum efficiency rather than detectivity. This would best suit the relatively high signal levels present in IR microscopy. It will be appreciated that, in use, the small array shown in Figure 4 is used to create an image 16 pixels at a time and the image is built up over a period of time in a manner similar to that carried out in existing microscopes by stepping the sample stage to map the required area of the sample under investigation. At each step of the sample stage the detector array (85) receives radiation from an area of the sample not previously covered by the array. For example, looking at Figure 4, the sample stage could be stepped in increments corresponding to a pixel pitch so that at each step, areas of the sample corresponding to the spaces between detector elements (86) are covered at a next or subsequent step of the stage. This form of array allows an image of a sample to be built up by effectively tiling the sample.